

This interagency report will summarize wildland fire activities in the Southwest Area during 2000. It is broken down into the following sections:

I. Highlights

II. Fire Season Statistics

III. Incident Support Summary

The 2000 fire season in the Southwest Area can best be described as the season that drew national and international attention to wildland fire in the Southwest. A total of 6,779 wildland fires were reported in the Southwest Area, with over 595,611 acres burned. Although these numbers do not represent the most fires or acres burned historically recorded in the Southwest, these numbers are quite significant. Human caused fires accounted for 2,817 of these fires, burning over 449,498 acres or 75 percent of all acres burned in the Southwest Area. In addition, a total of 23 fires were reported as being managed under a Fire Use management strategy, with 32,801 acres burned. The Gila National Forest in southwestern New Mexico burned the majority of these with over 23,533 acres burned.

The season in the Southwest started in February and March with a number of large fires in open grasslands, including the Valentine (40,333 acres) and Grande (36,324 acres). The first significant fire in timber fuel types occurred in early May when the Frijoles Canyon prescribed fire on the Bandelier National Monument was declared a wildland fire and renamed the Cerro Grande Fire. Before the Cerro Grande Fire was over it had burned more than 47,650 acres and destroyed 285 homes and structures. A number of other significant wildland fires occurred around the same time as the Cerro Grande Fire and in the following weeks, including the Cree (8,265 acres and 3 structures destroyed) and Scott Able (16,034 acres and 65 structures destroyed) on the Lincoln National Forest, Hay Meadow (19,000 acres) on Bureau of Land Management's Las Cruces Field Office, Viveash (28,238 acres) on the Santa Fe National Forest, and the Manuelitas (1,410 acres) on New Mexico State lands.

The Area-wide Energy Release Component curve climbed well into the very high to extreme level in mid-April. The upward direction of the curve provided fire managers with the first indication that the fire season in the southwest would prove to be exceptionally busy and the potentially significant in the area of mobilizing wildland firefighting resources. The curve remained at this level through early to mid-June when several significant storms, bringing precipitation with them, moved through the area. By early July, the monsoon period that normally brings significant annual precipitation to New Mexico and Arizona had begun. As July wore on, it became apparent that the level of precipitation flowing from the monsoon period was light and scattered. As a result of the mediocre precipitation, it was anticipated that the Southwest Area might experience an above normal fire season during the late summer and fall. Fortunately, this did not materialize and no major events occurred the remainder of the year.

Wildland firefighting resources throughout the Southwest Area were stretched to their limits during 2000. The amount of orders processed through SWCC, for example, totaled over 14,000. This was the largest number of resource orders processed through SWCC since 1996. Both SWA Type 1 team's were mobilized to several fires throughout the Southwest Area (i.e. Coon Creek, Cerro Grande, Viveash, and Saliz) and nationally (i.e. Boulder Complex, Mussigbrod Complex, Clear Creek, and Upper Nine Mile). In addition, all four Zone Type 2 teams were mobilized at one time or another. All Type 1 hand crews were assigned to numerous incidents through out the fire season, with many going back-to-back from mid-April through mid-September. In addition, over 600 requests for Type 2 crews were received for dispatches within the Area and to other parts of the nation.

As you will notice, the 2000 fire season in the Southwest Area was quite eventful. However, even with the level of fire activity in the SWA and the nation, safety considerations of the firefighter were constantly monitored and adhered to. Only a minimal number of injuries were actually reported. This does not belie the fact that firefighting is a very hazardous profession. In May, two fatalities did occur within the Southwest Area. Sam Tobias, a Lincoln National Forest employee, and Leo Koponen, a private contract pilot, was fatally injured shortly after take-off from the Alamogordo Airport. The two were en route to do a reconnaissance flight of the Forest for potential fire starts and a flyover of the Scott Able Fire. All of us within the Southwest Area extend our most heartfelt condolences to the families of these courageous individuals.

Section I

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Highlights

SOUTHWEST FIRE MANAGEMENT BOARD HIGHLIGHTS

Toward the end of winter and early spring of 2000, it became apparent that the coming fire season in the Southwest Area could be extraordinarily severe. The Southwest Fire Management Board began working early on some of the problems. Severity funding of additional resources and stepped-up prevention measures were addressed during the January meeting.

Large fires were occurring throughout the Southwest Area, especially New Mexico, from February through April. This prompted the agencies to bring in additional resources from out of the area. At the beginning of May, the Cerro Grande fire took off and threatened the town of Los Alamos. Within a couple of days, the Cree and Scott Able fires were threatening communities in southeast New Mexico and the Board began regular meetings as the Southwest Area Multi-Agency Coordination (MAC) group, setting priorities and overseeing the allocation of resources throughout the long, hard season.

With only a few short breaks, MAC group meetings were held at least daily into September. The summer monsoons were weak, and the Southwest's fire season became extended. Other areas, particularly the central and northern Rockies, were also hit with extraordinarily severe fire conditions, and resources became very scarce. The SW MAC group worked with the National MAC group to try to balance our needs against the needs of other Geographic Areas.

It was a very challenging and trying season. Priorities, requests, and directions changed constantly and the struggle to protect communities and resources across the country with the firefighting resources available nearly became overwhelming. Rotation and rest and recuperation of firefighters and other personnel were a significant problem, as was dealing with scarce aviation resources. Locating resources and resolving conflicts was very demanding.

Some of the problems associated with the Cerro Grande fire fell to the Board to address, and we have worked on revising and strengthening the guidance in the Mob Guide for contingency resources and ordering and allocation for prescribed fires in 2001.

The Board has been asked by the Regional Executive Committee of the Southwest Strategy to oversee interagency collaboration and cooperation as the federal agencies implement the new National Fire Plan. In light of the new congressional money and direction for community and resource protection, the Regional Executives are directing the agency administrators to coordinate on issues such as planning, consultation, procurement, rural community assistance, suppression forces increase, etc. The Board

Have formed two groups - one for each state - to oversee and assist the units.

A number of changes in the Board's lineup took place in 2000. Charlie Denton of the Forest Service, and Al Alvarez of BLM Arizona both retired. The Board wishes to thank both of them for their hard work and contributions to the interagency fire community, and also for the honor of working with them. They will be missed.

Bob Lee
Chair

**USDA Forest Service
Region 3
Southwestern Region**



The fire season in Region 3 of the Forest Service proved to be challenging to all involved. Large fire activity on Forest Service lands began in February with the 85-acre Josephine Fire on the Coronado NF and continued through December with the December Fire on the Tonto NF. Forest Service units throughout the Southwestern Region reported 2,556 fires, of which 504 were human caused and 2,052 were lightning caused. In acres burned, there were 98,369 from human cause and 36748 from lightning for a total of 135,117. There were 46 class D or larger fires reported.

The Forest Service lost one individual to wildland fire during 2000. Sam Tobias, Lincoln National Forest, was killed in a plane crash just outside of Alamogordo, New Mexico. Sam was en route to do some reconnaissance of the several fires on the Forest when his plane went down. The pilot, a private contractor, was also killed in the crash.

The year brought many changes to the Region 3 Aviation and Fire Management Staff. Edy Williams-Rhodes replaced Al Defler as the Director Aviation and Fire Management, Ginger Brudevold-Black replaced Dan Winner in the Budget position. Charlie Denton retired in August and I was asked to serve as acting Assistant Director for Operations until the position is filled. In December, Jerome Macdonald came to the Regional Office from the Cibola NF to fill a new position as Fire Ground Safety and Training. In the Forests, Dean Macalister replaced Rich Kvale as the Fire Management Officer on the Coronado NF.

Congress signed legislation during the year creating a consolidated National Fire Plan for the Department of the Interior and the U. S. Forest Service. In October, the Implementation process got underway. A number of people are working on this process trying very hard to position Region 3 in line with the plan. Bob Leverton, Assistant Forest Supervisor on the Santa Fe NF, joined the AFM staff in December to serve as the Region 3 Implementation Team Leader. Thanks to everyone for their hard work and dedication in meeting the implementation tasks.

*John Schulte (Acting)
Assistant Director for Operations
Aviation and Fire Management*

**Bureau of Land Management
Arizona State Office
Fire and Aviation Group**



Arizona BLM entered the 2000 fire season with drought conditions brought on by the aftermath of the La Nina effect. The resulting annual growth was less than expected. The burning index was above average throughout most of the season for all of our weather stations. This was mostly driven by below normal live fuel moisture. Arizona received severity funds for three of its four zones. While the number of fires was only 102% of the 10-year average, the acres burned were 84% below the 10-year average.

Arizona BLM	1999	10 year average
Fires	234	229
Acres burned	3,987	24,200

Arizona used the Montana agreement in bring resources to Arizona under severity funding. The same agreement was used to assist Montana BLM in its severity requirements.

*Mike Fisher
(Acting) State Fire Management Officer*

Bureau of Land Management
New Mexico State Office
Fire and Aviation Group



It was a big year for us in BLM New Mexico, both on our own fires and helping others in the Southwest and other states. After a dry winter, BLM expected a severe fire season in 2000 and we were not disappointed. Fire crews were brought on early, and we prepared requests for severity funding, and began fire prevention measures. Extra severity resources were brought in for most offices as conditions worsened.

Our first large fires were near Roswell in late January and early February. We tried to complete as many prescribed fire projects as possible but burning conditions increased rapidly early in the season. Prescribed fires were suspended in May after the Cerro Grande fire escaped. Suppression activities kept everyone more than busy for the rest of the year.

Most of the field offices had large fires; the Chance fire near Socorro reached over 32,000 acres, the largest fire for the Las Cruces Field Office was the Hay Meadow at 18,000 acres, the Pot Mountain fire near Taos burned over 1000 acres of timber, and the Wall fire on the Albuquerque Field Office went over 2000 acres.

Along with the other agencies, BLM New Mexico sent people and equipment north to other states to help during the extended fire season. Everyone that could be spared went to fire assignments this year.

There were a few changes in the fire program staff this year. John Kwait came on board as the FMO for the Albuquerque Field Office, and Loren DeRosear was selected for the Las Cruces Field Office FMO position.

The 2001 fire season will present its own challenges and problems as we work with the other agencies and communities to implement the new National Fire Plan. Community protection will be a major priority for us, and we will increase both our suppression and fuels management capabilities statewide.

Bob Lee
State Fire Management Officer

**National Park Service
Intermountain Region
Southwestern Parks**



The word unprecedented was used many times during the course of the 2000 fire season and at times in the Intermountain Region (IMR) it did not seem remotely adequate to describe the situation. If fire business management numbers are any indicator, 450 wildland fire account numbers obligating approximately \$29 million dollars were assigned during the year for the region.

Beginning in late April at Great Sand Dunes National Monument until the end of October at Glacier National Park the fire staff participated in a fire season that marched north from Texas to Montana. There were many challenges; highlighted by the Cerro Grande fire at Bandelier National Monument. Lessons were learned not only in the Intermountain Region, but also in the National Park Service. There are many days of hard work ahead to apply the lessons learned toward the improvement of fire management in the National Park Service.

The Intermountain Region fire staff thanks the Intermountain Region Senior Management Team and the Fire Management Program Center team at NIFC for their support and assistance. The support from other regions and parks is also appreciated. At times it felt lonely, but we always knew we were never alone.

Operations/Suppression/Readiness

The unfortunate escapes of the Cerro Grande and Outlet prescribed fires in May signaled the onslaught of a fire season that refused to end until well into the fall. Regional employees participated in intensive reviews of these fires and the use of prescribed fires. Mesa Verde National Park was challenged by two significant fire events. National fire management resources were stretched thin and innovative appropriate management responses were successfully applied at Glacier, Yellowstone, and Grand Teton National Parks. Regional employees participated on Type I and II incident management teams, represented the NPS on the Southwest, Rocky Mountain, Northern Rockies and Great Basin Multi-Agency Coordination Groups and were assigned to Fire and Aviation Safety Teams in Colorado, Arizona, New Mexico, and Montana.

Aviation

Aviation was modest as far as a variety of issues in that a good share of time was devoted to the fire situation. The region increased aviation safety awareness by providing training in three Basic Aviation Safety and four Aviation Safety for Supervisors (M-3) sessions. The M-3 courses were the first time ever that NPS instructors were utilized in the class. The use of NPS employees as airspace coordinators was initiated during the fire season and five ranger/pilots from two regions were trained. We were unsuccessful in resolving differences with the Office of Aircraft Services (OAS) over services rendered and subsequent costs of services

to parks in the region. Development of a regional aviation policy was initiated to provide interim guidelines pending release of DO-60.

Fire Effects

The eleven fire effects programs in the region installed and re-read over 700 plots. The first regional fire effects meeting was held and attended by all parks lead monitors and fire effects specialists. The IMR Fire Ecology and Fire Effects Newsletter made its debut. Articles submitted by several parks and the hard work by Eric Miller of Yellowstone NP, led to a successful first attempt at facilitating important discussion in the fire ecology and fire effects community.

Burned Area Emergency Rehabilitation (BAER)

There were six new BAER programs resulting from the 2000 fire season. Large-scale programs requiring oversight from the Fire Management Program Center include the Bircher and Pony fires at Mesa Verde National Park and the Cerro Grande fire at Bandelier National Monument. Smaller programs at Pecos National Monument (Monument Fire), Grand Canyon National Park (Outlet Fire), Great Sand Dunes National Monument (Sand Fire) and Dinosaur National Monument (Buster Basin Fire) were managed at the regional level. Two previous projects, at Lake Meredith and Golden Spike were completed this year.

Fire Use Modules

The region's fire use modules began the field season in March and stretched to mid-November assisting fire managers in the NPS and US Forest Service. Due to the suspension of prescribed burning in May, module members were made available for suppression assignments. The modules, with assistance from several parks, were assembled into Type 2 suppression crews. This allowed these employees to enhance their suppression skills.

A prominent issue that continues to plague each module is the difficulty in recruiting, hiring and retaining crewmembers. Saguaro National Parks module never obtained minimum staffing, Yellowstone and Bandelier never achieved full staffing, and Zion was unable to fill its detailer position. The Modules were, however, able to complete 65% of the mechanical manipulation and hazard fuel reduction projects.

GIS / Planning

The Branch of Fire and Aviation welcomed Doug Stephen in the newly established GIS/Fire Planner position. Doug assisted numerous parks through the year. He assisted them in the use of FARSITE fire spread modeling, direct support to fire planning, and coordination of data layers between agencies and park GIS offices.

Contracts were initiated with private sector companies to complete fire management plans at Bents Old Fort National Historic Site, Florissant Fossil Beds National Monument and El Malpais National Monument. The plan at El Malpais will address the full range of fire management opportunities and constraints on NPS lands, as well as, across the shared boundary with the Albuquerque District, Bureau of Land Management.

Bryan Swift
Regional Fire Management Officer

**Bureau of Indian Affairs
Tri-Area Fire Management
Southwest, Western, and Navajo Regions**



Southwest, Western, and Navajo Regional Offices represent the Tri-Region in the Southwest Area. Overall, the fire season was above normal in fire occurrences and total number of acres burned. As a result, the Southwest Firefighter crews and overhead fire dispatches in and out of the Southwest Area were very high.

I am the BIA Assistant Director at SWCC. Ron Matt is the BIA Coordinator at SWCC. Mr. Matt is responsible for the mobilization, demobilization, and re-assignment of resources between home units and incidents in and outside the Southwest Area. Denny Bridges is the Aviation Specialist. Mr. Bridges coordinates with the three Area Offices and the interagency partners on procedural aircraft operations, training and accident investigations. Steve Larrabee is the Regional Fire Planner. Mr. Larrabee provides technical assistance and oversight of the fire management planning activities for the BIA Southwest Area.

Southwest Region

The Southwest Region of the Bureau of Indian Affairs, headquartered in Albuquerque, experienced several large fires during the 2000 fire season.

The region was severely impacted by the Cero Grande Fire, which burned onto the Santa Clara and San Ildefonso Indian Reservations. The fire devastated the commercial timber base of Santa Clara and impacted tourism enterprises at Puye Cliffs and Santa Clara Canyon. Over 6,600 acres burned on Santa Clara and nearly 300 acres at San Ildefonso. Burned Area Emergency Rehabilitation projects are aggressively being implemented to mitigate the effects of the fire.

The Bircher and Pony Fires on the Ute Mountain Reservation and Mesa Verde National Park were both manned by Type I teams. Nearly 4,000 acres of reservation lands were burned during the Pony Fire and 3,000 acres during Bircher. Both fires for all jurisdictions burned over 28,500 acres. Burned Area Emergency Rehabilitation projects are being coordinated between the Bureau of Indian Affairs, the National Park Service, the Ute Mountain Tribe, and its tribal construction company, Weeminuche.

Hotshot programs are in development at Zuni Agency and Northern Pueblos Agency. Helicopter programs are being created for central New Mexico and the Four Corners area. Two Single Engine Air Tankers will continue to be operated out of the Double Eagle Airport in Albuquerque. The Regional Office has added two new staff positions, a Fuels Management Specialist and a Regional Fire Management Officer. At the Agencies, staffing is being increased to aid in suppression operations.

Critical fuels management projects accomplished in 2000 are as follows: 3,840 acres prescribed burned and 2207 acres mechanically treated at Mescalero; and 3,764 acres burned at Jicarilla. Overall in the region, approximately 11,250 acres were either mechanically treated or prescribed burned.

The Southwest Fire Fighter program is once again an integral part of our fire management operations and the reservation economies. The Zuni Program grossed over \$2,139,034 in crewmember earnings.

The Western Region

While the fire season of 2000 attained historic proportions in both total acres burned and suppression costs from a national perspective, the fire season on tribal lands within the Western Region was relatively normal, despite severe drought conditions in many areas. Overall, tribal lands in the Western Region had 1,040 fires burning a total of 23,032 acres. This acreage is comparably average for annual totals from 1970 to the present. The worst fire year was 1984, when 1,276 fires burned a total of 57,614 acres of tribal lands in the Western Region. During the 2000 fire season, Fort Apache had the most significant fire occurrence, with 481 fires burning 11,800 acres. Western Nevada Agency and Uintah-Ouray Agency had significant fire activity, with approximately 3,500 acres of tribal lands burning in each of those areas.

Two major fires occurred in the region, the Ridge Fire on Fort Apache Reservation burned over 8,000 acres and the Moccasin Fire on Southern Paiute burned approximately 1,500 acres. Both fires required extensive rehabilitation efforts, which are currently in progress under the direction of BAER (Burned Area Emergency Rehabilitation) Teams.

Firefighters from agencies and tribes in the Western Region responded to 611 interagency support requests from across the country as the fire season reached historic proportions. Western Region firefighters served on crews and overhead positions throughout the west, with a high total of approximately 45 Type II crews from the Western Region assigned to fires in August.

Prescribed Fire activity within the Western Region was relatively quiet due to drought conditions, Departmental bans on prescribed fire after the Los Alamos escaped prescribed fire in the early season, and high National Preparedness levels throughout most of the summer and fall precluded significant prescribed fire activity nationwide. The San Carlos Tribe was able to accomplish two burns for a total of 3,918 acres.

Regional Office staff provided extensive support in overhead assignments throughout the historic fire season of 2000. Ron Miller, Woodlands Forester served on three assignments as a Status Check-in Recorder, one as a Field Observer, one as a Task Force Leader, one as a Military Crew Advisor, and one assignment as a Crew Representative for 13 Southwest Type II Crews. Bob Bizal, Timber Sales Administration served on seven assignments as a Situation Unit Leader with one of the Southwest Regions Interagency Type II Teams (Joki). John Philbin, Regional Forester served on six assignments as a Logistics Chief on one of the Southwest Regions Interagency Type II Teams (Joki) and two assignments as a Division Supervisor. Keith Burnette, Regional Fuels Specialist, served on four assignments as a Field Observer and one as a Strike Team Leader for Type II Crews. Marlene Charley, Administrative Support, served as Dispatch Recorder on four extended assignments at the Southwest Coordination Center and at the National Intelligence Coordination Center in Boise, Idaho. Carletta Coochwyte, Budget Analyst, served on four assignments at the Southwest Coordination Center and the Coon Creek Fire and one with the ADO payment team at Fort Apache. Lyman Clayton, Forester, served on two assignments as a Contract Representative and one as a Dispatch

Recorder at the Southwest Coordination Center. Leon Ben Jr., Regional Fire Management Officer, served on one ADO payment team assignment at Fort Apache and as a Dispatch Recorder at the Coon Creek Fire. Robert Plantrich, Assistant Regional Fire Management Officer, spent a month at the USGS Rocky Mountain Mapping Center, helping coordinate the GeoMAC project, an interactive Internet based mapping system, which provided real time satellite infrared images of wildfire perimeters across the west.

Other Regional Fire Management highlights included the development of the Western Region Crew Management Board and the purchase by the Regional Office Fire Staff of 96 narrow band portable radios for Regional Type II Crews to improve safety and operational capability on the fireline.

The Navajo Region

The Navajo Regional Office fire season for FY 2000 was unprecedented in the area of size and amount of fire occurring on the Reservation. The Honeywell and Navajo Mountain fires were the two (2) largest fires occurring on the Navajo. The intensity and size precipitated by extremely dry conditions and below normal amounts of rainfall. Rehabilitation work on these projects is continuing.

These were 246 fires on the Navajo Reservation with the majority of these fires occurring in Ponderosa pine and woodland fuel types. The total acres consumed were 1,627 acres. There were 364 fire numbers issued this season, which included off reservation and out of Region fire assignments. The amount of revenue generated by the Emergency firefighter's program was in excess of 2.8 million dollars. The total amount of fire costs, associated with all fire activities, was 4.8 million dollars. The amount includes total equipment, supplies and aircraft cost.

During FY 2000 the Fire Use activities on the Navajo continued with an emphasis on Wildland Urban Interface projects. Total treatment projects numbered 26 with 22, 480 acres being treated. Activities are continuing for projects involving "Communities at Risk" on the Navajo, with numerous projects identified on the National Register Key. Fire Use and Fire Management individuals are involved with interagency training and projects.

The Navajo Region was also identified as one of three Nation's to develop an Interagency Hotshot Crew (IHC). Approval and funding for this project was granted through the National Interagency Fire Center in Boise, Idaho. The first year of the project will involve recruitment and training involving several different agencies. Also during this timeframe, the Navajo Region was funded for additional fire management buildings, which will increase our facilities size and efficiency. Total size of the buildings is 10, 000 square feet.

Fire Management overhead on the Navajo participated in many seasonal fire assignments and also training activities in other regions. Several interagency training activities were hosted and conducted by Navajo Regional fire staff. Several silviculture and fire workshops and seminars involving National Interagency Fire Center personnel were conducted. The Southwest Region Southern Ute tribe and the Navajo Nation held a firefighter's recognition and appreciation ceremony/banquet for all the Navajo Nation's firefighters. The Emergency

Firefighting program continues to have superior performance ratings on all of their assignments.

Willie Begay
BIA Tri-Area Assistant Director
USDA Forest Service/SWCC

U. S. Fish & Wildlife Service
Region 2
Southwest Region



Numerous large fires outside the agency lead to a season of interagency mutual aid. By the end of the Western fire season, 29 Arizona and New Mexico FWS personnel participated on wildfire assignments for a total of 1,295 days (Average 45 days each). This included both fire and non-fire personnel. The numerous large incidents in the country helped in getting the FWS its first Type I Incident Commander, Jeff Whitney.

The first FWS severity request for the region was submitted in April for the refuges in the Lincoln and Gila Zones of Southern New Mexico and the Western Arizona Zone. A second was submitted in May for Refuges in Texas, Arizona, and New Mexico, followed by a thirty-day extension for AZ and NM. Starting in May, a New Mexico Fire Prevention Team was stationed at our RO in Albuquerque for 60 days. The final 2000 severity request was made in August for the Lower Colorado River.

A total of 29 wildfires burned 16,380 acres on AZ/NM FWS lands during the 2000 fire season. The largest fires in the Southwest Area were the 5,700 Gus fire and the 5,200 City Hall 2 fire, both at Buenos Aires NWR.

Prescribed burning took a back seat this year due to fire conditions. Although there were restrictions in 2000, New Mexico and Arizona Refuges were able to have 17 prescribed fires totaling 876 acres.

FMO Staffing changes included Butch Wilson stepping in as the Regional Suppression FMO and leaving to replace the retired Rees Madsen at Buenos Aires. Jeff Whitney replaced Butch in the RO. Don Geesling moved from FMO at Brazoria NWR in Texas to the Interagency AFMO at Lower Colorado River.

Mike Benscoter
Regional Fire Management Coordinator

**State of Arizona
State Land Department
Fire Management Division**



Fire Season 2000 was a much more interesting year for us than the statistics on the attached summary report indicate. Summer moisture during the previous year that resulted in a flush of growth in grasses and forbs, especially in southeastern Arizona was followed by an extremely dry winter and left us very concerned going into the fire season. We asked for and received \$1,000,000 in pre-positioning (severity) funds from the Governor's office to meet the threat of the anticipated fire season. This effort, coupled with additional severity funded firefighting resources of National Forest and Interior Department Agencies contributed to the below average number of acres on State and private lands in Arizona. At year's end we had responded to 1168 separate actions resulting in 489 fires with on 7,984 burned acres.

Additionally Arizona State Land dispatcher responded to 313 separate requests for overhead and equipment for fire suppression actions throughout the west. As the Arizona fire season wound down we contributed many State resources to fire fighting efforts in Montana, Idaho, Colorado, Nevada, Utah, California and other states. In fact we're quite proud of efforts that resulted in 97 fire engine and 128 overhead position assignments during CY 2000 outside Arizona state boundaries.

State of Arizona severity funding efforts were highlighted again this year, by the joint effort between the Fire Management Division and the Apache-Sitgreaves National Forest's to place a type III helicopter and crew at Heber, Arizona. The cost of the helicopter was borne by the State and cost of the detail crew by the A-S. All management and dispatch functions were covered by the Apache-Sitgreaves. Additionally we jointly funded an ATGS module with the Coconino National Forest, pre-positioned single engine air tankers at Phoenix and Sierra Vista for interagency use and added 15 engine/prevention patrols on a daily basis during the critical period throughout the State.

For the second year, the State of Arizona supported joint dispatch agreements with the Coconino and Apache-Sitgreaves National Forest that accomplished true interagency dispatching during the past year. The Fire Management Division provided a full time summer dispatcher to the Coconino NF and a portion of the salary for a seasonal dispatch employee on the Apache-Sitgreave.

The Arizona Land Department remains committed to the total mobility of State firefighting resources and to the national interagency fire effort.

David G. Behrens

State Fire Management Officer

State of New Mexico
Forestry and Resources Conservation Division
Fire Management Division



For New Mexico the 2000 fire season started early in the calendar year with the absence of any fall or winter precipitation. The Forestry Division started having wildland fires on January 1, 2000 with three fires burning 825 acres. On February 12, 2000 the Valentine fire, driven by 50 mph winds, burned over 40,000 acres of grassland in Lea County. The Johnny fire followed this on February 17, 2000, which was started by the railroad and burned over 42,000 acres of grassland in De Baca County and threatened the town of Fort Sumner. This was a prelude of what was to be the worst fire season in history for New Mexico. The 2000 fire season tested all of the fire service in New Mexico before the monsoon rains finally established themselves in over southern half of the state in July. However, wildland fires continued to test firefighters in the northern half of the state until late September.

Just prior to the Cerro Grande Fire, the State of New Mexico requested a Presidential declaration through the Federal Emergency Management Agency for pre-positioning of firefighting resources. The request was approved and allowed the Forestry Division to order and pre-position firefighting resources throughout the state. These resources included:

- 2 Single Engine Air Tankers (placed at Las Vegas and Ruidoso)
- 2 Type II Helicopters (placed at Ute Park and Socorro)
- 2 ATGS Platforms (placed at Santa Fe and Silver City)
- 2 FEMA Advisors from the State of Oregon
- 22 Type 6 Engines
- 2 Type 4 Engines
- 2 STEN's
- 33 Miscellaneous Overhead

Overhead and engine crews were switched out from May through July 1, 2000, to maintain rapid initial attack capability for the Forestry Division.

The Forestry Division made 7 requests to FEMA for Fire Suppression Assistance, which were approved for the following fire incidents:

- | | |
|----------------------|----------------|
| • Rio Grande Complex | • Cerro Grande |
| • Cree | • Scott Able |
| • Manuelitas | • Viveash |
| • La Cueva | |

Forestry Division personnel supported large fire incidents in Arizona, California, Colorado, Idaho, Oregon, Montana, South Dakota, Texas and Utah during the 2000 fire season.

Frank Smith
Chief, Fire Management Division

**National Weather Service
Weather Service Forecast Office
Albuquerque Area Office**



Weather

The weather pattern in 2000 continued to be heavily influenced by an ongoing, but gradually weakening. La Nina episode. Like in 1999, considerably warmer and drier than normal conditions persisted through the winter months. The difference this year is that significant precipitation did not materialize in the spring and summer months and the warmer and drier than normal conditions persisted unchecked through the normal "monsoon" season. This brought prolonged drought conditions to the state, which contributed substantially to an active and destructive fire season.

The warm and dry winter conditions left the statewide snowpack well below average through the winter and early spring, with the southern two-thirds of the state reaching moderate to severe drought conditions by late April. The main storm track remained north of New Mexico, leaving the state on the dry and windy side of passing storm systems. As April and May progressed, a number of Red Flag events occurred as storm systems brought very windy and dry conditions with little or no precipitation.

Despite the dryness during the winter and spring months, it had been anticipated that the normal summertime "monsoon" pattern would become established as usual and bring an end to the fire season by July. This thinking was reinforced when wet thunderstorms began to occur across the state during the first two weeks in June. However, drier air returned to the state by the end of the month and thunderstorm activity remained rather sporadic through the remainder of the summer. Many locations saw a continuation of much below average rainfall into the fall, which caused drought conditions to worsen further. These conditions were mitigated by a series of wet storm systems, which moved through the area in October and November. These systems produced much above average monthly rainfall in many areas and helped build the mountain snow pack levels to near normal by the end of December.

Operations

The main changes to operations were to revise the Red Flag Warning criteria, continue to certify new IMET trainees and expand the off-season narrative forecast format. The Red Flag Warning criteria were expanded to include humidity and fire

danger, as well as wind, so as to best represent days when fire behavior would be extreme. IMET trainees at Midland and El Paso were fully certified by the end of the season so that New Mexico now has three total IMET's with local weather knowledge. The off-season forecasts were changed so that all daily narrative forecasts are now more consistent throughout the entire year and they provide more specific weather information for planning purposes during the normal prescribed fire season.

Chuck Maxwell
Fire Weather Forecaster

**National Weather Service
Weather Service Forecast Office
Phoenix Area Office
November 1999 through October 2000**



NOVEMBER 1999

November was very dry, with very little precipitation falling in the state. Only some light showers occurred in far northern Arizona during the latter part of the month. The month started with a strong ridge of high pressure aloft over the Southwest. This ridge brought warm temperatures and dry weather to the state for the first several days of the month. Some cooling did occur on the 8th and 9th of the month when a trough of low pressure from the Pacific pushed into the West. This trough did bring rain to California, but it lost most of its moisture as it moved eastward from the coastal areas with the results that none fell in Arizona, with perhaps an exception of a few light showers in the far northwest. After that system moved on, a very strong ridge of high pressure developed over the Southwest. This brought an extended period of above normal temperatures to the state, extending into mid month. This ridge finally weakened by the 17th, permitting low pressure troughs to move across the West from the Pacific. Most of these troughs remained north of Arizona, but did allow temperatures to cool some even though precipitation remained north of the state. Temperatures finally dropped below normal for the first time in the month from the 22nd through the 25th when a relatively cold low pressure trough moved in from the west. This system did manage to bring a few light showers to far northern Arizona, but otherwise conditions remained dry. The high pressure ridge started to rebuild off the Pacific coast on the 24th, and then moved eastward to about the end of the month. This brought warmer temperatures back into the state with dry conditions.

November was warmer than normal, in some cases well above normal. Only the system that moved in on the 22nd kept temperatures from being even warmer, when it brought below normal temperatures to the state for a few days for the only time that month.

DECEMBER 1999

The dry November continued unabated through the month of December when precipitation remained well below normal. In fact, many areas failed to get any measurable precipitation during the month of December. There were a few low pressure areas that did drop into the Southwest, but they proved to be mostly dry systems with the main effects being some wind and cooler temperatures. Overall, temperatures did not stray too much from the normal for the month, with the above normal readings later in the month being offset by cooler temperatures earlier in the month. The first low pressure trough of the month occurred around the first day, with a dry cold front moving through Arizona. However, the main energy associated with this upper trough was north of the state, resulting in no precipitation most areas. A colder and deeper system moved close to the 4 corners area from the northwest on the 3rd. It did bring light showers to a few areas of northern Arizona, but the main effect was cooler temperatures and some wind. Most of the cooling occurred over the northeast quarter of the state. This low was followed by higher pressure on the 4th and the 5th, before another low pressure

system moved into northern Arizona from the northwest on the 8th. Again, very little precipitation occurred with this system, with only some very light showers in the north, along with some cooling. Still, another low pressure trough from the northern Pacific dropped into southern California on the 10th. However, this system dropped into northern Mexico before moving eastward, with the results that precipitation, including a few thunderstorms, occurred mostly south of the state. A few areas in northwest Arizona, however, also received a few light showers as this low brushed that area in its southward movement through southern California. Arizona stayed under a dry northwest wind flow for an extended period of time through about the 21st. Strong high pressure off the southern California coast eastward into the Southwest also brought some warming, especially to the western part of the state, from the 15th through the 17th. This strong high then built well northward to off southwest Canada from the 19th through the 23rd. This resulted in a northerly flow from Canada southward through the Great Basin and Rockies. This northerly flow was mostly dry for Arizona. However a weak disturbance moving southward in this flow through eastern Arizona developed into a low pressure area over northern Mexico, south of southeast Arizona. A few areas in the eastern mountains experienced light precipitation, but the rest of the state stayed dry. By the 25th, this low drifted northwestward through Arizona, while a strong high pressure cell sat over the Pacific Northwest. The low did bring a few more light showers to northeast Arizona while it drifted northwestward. This same low continued to drift northwestward too off the central California coast by the 28th. On the last day of the month, this wandering low drifted back southeastward into southeast California, with a little moisture south of this low rotating into southeast Arizona.

JANUARY 2000

Dry weather continued through the month of January. Once again, precipitation was well below normal. On the 2nd of January, Phoenix Sky Harbor airport has .01 inches of rain, the first time any rain fell at the airport in over 100 days. The month did start off on a wet note. The meandering low which affected the state at the end of December, finally moved across Southern California and in Arizona on the first of the year. It brought Flagstaff over a third of an inch of rain during the first two days of the month, with only minimal precipitation to southern Arizona. The state then went through an extended period of little or no precipitation. A ridge of high pressure aloft over the eastern Pacific kept a dry northwest wind flow over Arizona through the 10th of the month. Only very light precipitation fell in the far northern Arizona on the 8th as a weak disturbance from the northwest brushed that part of the state. By the 10th, the eastern Pacific ridge weakened and redeveloped over the southern Rockies, where it remained through mid month and until about the 20th. This ridge also extended into Arizona, and resulted not only in the continuation of the dry weather, but also brought very warm temperatures to the state. This ridge weakened somewhat on the 21st, but the dry weather continued through the 24th. Precipitation finally returned to at least the northern half of Arizona on the 25th and 26th, as a Pacific low pressure system moved across the Great Basin and Arizona. The westerlies became a little better established across Arizona late in the month. This allowed another Pacific system to move into the Great Basin at the end of the month...resulting in some light showers across northern Arizona on the 31st.

FEBRUARY 2000

The lack of precipitation this winter continued through the month of February, with some areas in southern Arizona getting no precipitation. Northern Arizona fared a little better, but still remained below normal. Strong high pressure aloft developed over southern California on the 2nd, and moved into Arizona on the 3rd. This ridge hung around through the 8th, giving the state warm, dry weather. This high pressure ridge started to weaken by the 9th, allowing the westerlies to make some headway into the Southwest. This did enable a couple disturbances to brush Arizona, bringing mostly light precipitation to the northern part of the state from the 9th through the 13th. The ridge then did strengthen a little for a few days, but then another Pacific disturbance moved in on the 17th. This was followed by a stronger and wetter system on the 21st and 22nd, with still another one on about the 24th. Still another system approached the state on the 28th. These weather disturbances during the latter half of the month did bring some precipitation to especially northern Arizona, but they were not enough to make up for the dry winter thus far for most of the state.

Temperatures again stayed above normal over the state...continuing the warm and dry conditions during the winter months.

MARCH 2000

March brought some relief from the very dry winter as many areas in the state received above normal precipitation for a change. A pattern started to develop where a series of Pacific weather disturbances at mid latitudes would drop southeastward into the southwestern United States before rushing eastward across the southern states. Early March saw a few of these systems move by Arizona. One particularly strong storm stalled along the southern California coast as it became separated from the westerlies to the north. It brought generous amounts of precipitation to portions of Arizona on the 5th of the month, followed by another system right on its heels, which brought even more precipitation to the area on the 6th. This precipitation lingered on into the 7th. Some desert areas had continuous precipitation for over 36 hours, an event more common in the Pacific Northwest than in the desert southwest. This turned out to be the wettest time of the month. After this period...another dry period set in. The jet stream shifted back to the north and then high pressure aloft started to build over Southern California and Arizona that lasted past midmonth until about the 20th. At that time, another strong low pressure system from the Pacific dropped southeastward and became cut off from the westerlies over Arizona by the 21st. It moved slowly through the state on the 21st and 22nd. Since most of the deepening took place over land before heading into Arizona, there was not nearly as much moisture associated with this one, as there was earlier in March. Some more precipitation took place during the last few days of March. A mild low latitude Pacific weather system moved through the state on the 28th, followed by a colder system digging southward over land into Arizona on the 31st.

Precipitation ended up above normal many areas with near normal temperatures.

APRIL 2000

Another month with below normal precipitation occurred in April of this year. Many areas in southern Arizona did not record any measurable precipitation at all. A few areas in the state did get some moderate amounts of precipitation early in the month. Most of this moisture occurred near the beginning of the month when a moderately strong and cool low pressure system moved through the state on the 1st. This was followed by warmer and drier weather as a ridge of high pressure aloft pushed in from the west. The next low pressure system pushed through the northeastern portion of the state on the 11th. This resulted in some light precipitation in parts of northern Arizona. This was followed by another system on the 14th, and another one on the 18th. These two systems only brushed northern Arizona, bringing small amounts of precipitation to that part of the state. The next system from the Pacific pushed into northern Arizona and Utah on the 22nd, but once again, only light amounts of precipitation fell in mainly far northern Arizona. Higher pressure aloft dominated for most of the remainder of the month, until a low pressure trough moved into the state on the 29th. Precipitation was mostly minimal with this disturbance.

This was a relatively warm month with temperatures averaging about 4 or 5 degrees above normal at all the major recording stations.

MAY 2000

May was very dry across the state. Only light amounts of precipitation fell on a few days in northern Arizona...with no precipitation occurring in the south. What precipitation did fall fell mostly in the mid and latter part of the month. A deep low pressure system moved into central California on about the 15th of the month, before moving eastward across the Great Basin on the 16th and 17th. This system followed a previous system a few days earlier, which brought cooler temperatures but little precipitation, since it was further to the north. The coolest temperatures of the month occurred with both of these systems. One more weak low pressure disturbance moved across Arizona on the 25th. It did bring somewhat cooler air into the state, but only very light amounts of precipitation, generally less than a tenth of an inch to portions of northern Arizona.

May was a warm month, with the mean temperature averaging 5 or 6 degrees above normal.

JUNE 2000

The first couple weeks of June was mostly on the dry side across most of Arizona, with the state either under a high pressure ridge, or under a dry southwest wind flow. An unseasonably strong and cool low pressure system did move into northern and central California on the 8th, before weakening and moving eastward across the Great Basin on the 9th. It didn't bring any rain to the state, but it did bring cooler and windy weather too much of Arizona. The subtropical ridge did start to build over northern Mexico by around the 18th of the month. This resulted in a little monsoonal flow moving northward into Arizona from Mexico. Parts of southeast Arizona did start to get fairly good amounts of precipitation...totaling between one half and

three quarters of inch of rain. The White Mountains also reported rainfall during this period, mostly between one-quarter and one-third of an inch. A trough and associated cold front moving across northern Arizona, coupled with some additional monsoonal moisture from the south, did produce up to nearly a half inch or rain in far northern Arizona during about that time. During the last third of the month, a more monsoonal flow from the south and southeast helped bring additional rain to Arizona. Rainfall amounts increased from 1 to 2 inches during the last third of the month, helping to alleviate the drought conditions of the past few months.

Temperatures averaged above normal for the state, although the anomalies were not as great as during the month of May.

JULY 2000

July was once again drier than normal across the state, with temperatures close to or slightly above normal. The most generous rainfall occurred over southeast Arizona, but even in that part of the state, many areas had below normal amounts. For about the first 7 or 8 days into the month, a low pressure trough over the far western states kept a dry southwest flow over most of Arizona. After that period, the trough and the southwest flow weakened, permitting a more southerly flow to return to the state. This return flow affected especially southeast Arizona, where some mountain locations had from 1 to over 2 and one-half inches of rainfall. During the middle 10 days of the month, the subtropical high pressure ridge aloft pushed in over the state, bringing warm temperatures to Arizona. Although the position of the high favored a southerly flow over at least the southern third of the state, rainfall amounts were not very significant, though a few places in the White Mountains had over an inch of rain during that period. As the month progressed through the last 10 of July, the high pressure ridge drifted westward, especially towards the end of the month. This put the state under a more northeasterly wind flow. Again, southeast Arizona experienced the most rainfall, and the northeast wind flow did direct some storms from the rim southwestward into the central deserts, but overall, precipitation remained below normal.

AUGUST 2000

Though some locations in Arizona experienced a little below normal precipitation, there was plenty of rainfall to help alleviate the below normal precipitation that occurred for most of the previous several months. In fact, one southeastern mountain location, Rincon, experienced over 10 inches of rain during the month of August, while some mountain locations in other parts of the state reported between 3 and 6 inches. A monsoonal flow from the south and southeast persisted through much of the month, as high pressure aloft stayed mostly to the east of Arizona. Towards the end of the month, an area of low pressure approaching the California coast deepened the southerly flow into the state, keeping Arizona under a deep moist southerly flow.

Temperatures for the month were near or a little above normal.

SEPTEMBER 2000

Although some relief from the drought occurred in August, September turned out to be a very dry month, with precipitation well below normal. For the first 8 days of the month, a southwesterly flow aloft ahead of a Pacific coast low pressure trough limited monsoon moisture to mainly to the eastern portion of the state and at some rim locations, but even in these regions, moisture was limited. Some showers in north central and northeast Arizona were a result of the low pressure trough moving by through the Great Basin and brushing the state. During the middle 10 days of the month, little, if any, rain fell over most of the state as high pressure aloft pretty much dominated. The center of this high shifted westward to off the central Pacific coast by the 18th, with even a drier northwest to northeast wind flow developing over Arizona. By the 23rd, an unseasonably strong low pressure trough pushed southeastward through the western states into the central and southern Rockies. The associated cold front dropped into northern Arizona. It brought very little in the way of precipitation to the state, but it did bring windy weather and much cooler temperatures to far northern Arizona, with somewhat cooler temperatures elsewhere. Near the end of the month, a weak low-pressure area moving into southern California did help bring a few more showers to some areas in eastern Arizona. However, this turned out to be a very dry month.

Most of the state experienced above normal temperatures.

OCTOBER 2000

This month was quite wet...with precipitation well above monthly normals for October. A very active storm track developed from the northern Pacific southeastward into the Southwest during the month of October. As a result, this month had well above normal precipitation and cooler than normal temperatures, especially daytime temperatures. The month started off quiet enough with a flat ridge of high pressure was over the Southwest. A weak low pressure area was located off the southern California and northern Baja coasts, which moved little for the first 3 days of the month. A portion of this low did move into Arizona on the 4th and 5th, weakening as it did. However, because of some subtropical moisture over the region, it did produce some mainly light showers, with some of the heaviest amounts totaling between one quarter and one half inch at some mountain locations. Another weak disturbance moved in a few days later, around the 8th and 9th, producing more light showers. However, the first of many unusually strong northern Pacific systems was dropping southeastward and deepening over northern and central California on the 10th. With the air mass remaining rather moist over Arizona, prior to this new storm, precipitation became rather plentiful over Arizona from mainly the 10th to about the 12th of the month, when this system moved slowly eastward across the Southwest and Great Basin. Even the lower forests, such as the Tonto, enjoyed a good soaking, receiving between one and two inches from that storm. The eastern mountains in the Apache-Sitgreaves and Coronado National Forests got particularly wet, receiving in some areas between 3 and 5 inches of rain. Conditions quieted through the middle of the month, but a weak lower latitude system did bring more rain to the state, especially to southeast Arizona, as the low moved across northern Mexico. A few areas in the southeast received over an inch of rain. Another relatively cold and strong system followed shortly after, digging southward over the far western states into northern Baja on the 22nd, before moving northeastward across Arizona on the 23rd. With the air mass already very moist, this storm brought copious amounts of rain to Arizona, resulting in flooding

in some parts of the state, which had already received heavy rain and had experienced some flooding earlier in the month. Still another system from the northern Pacific plunged southward too off the northern California coast on the 25th, before moving into southern California on the 27th, and weakening some and pushing across Arizona on the 28th. This was followed by still another storm from the northern Pacific that plunged southeastward into Arizona at the end of the month. The presence of all these storms resulted in an abundance of rainfall, with snow at the higher elevations, especially towards the end of the month when temperatures were colder. Totally monthly precipitation amounts were almost unbelievable, with some areas receiving from 6 to 10 inches of rainfall. Some areas went from well below normal annual precipitation to above normal annual precipitation during the month.

CAMPAIGN FIRES STAFFED BY THE PHOENIX WEATHER OFFICE IMET- 2000

<u>FIRE</u>	<u>UNIT</u>	<u>DATE</u>
Paddy Creek Fire	BIA , Fort Apache, AZ	4/10/00-4/12/00
Coon Creek Fire	Tonto NF, AZ	5/01/00-5/08/00
Cerro Grande Fire	Bandelier National Mon (Near Los Alamos Lab.,NM)	5/11/00-5/17/00
Viveash Fire	Santa Fe NF, NM	6/15/00-6/22/00
Peak Fire	BLM, Tonto NF, Globe, AZ	8/10/00-8/14/00
Encampment Fire	BLM, Encampment, WY	8/14/00-8/21/00
Alder Creek Fire	Lolo NF, MT	8/30/00-9/05/00
La Paz Flood	AZ State Land Dept (Wenden, AZ)	10/27/00-10/31/00

CAMPAIGN FIRES STAFFED BY THE FLAGSTAFF WEATHER OFFICE IMET-2000

Outlet Fire	NPS, Kaibab NF, AZ	5/14/00-5/18/00
Pumpkin Fire	Kaibab NF, AZ	5/25/00-6/01/00
Pike Fire	Coconino NF, AZ	6/09/00-6/19/00 (done from office)
Peak Fire	BLM, Tonto NF, Globe, AZ	8/01/00-8/11/00
Thompson Flat Fire	Lolo NF, St. Regis, MT	8/25/00-9/05/00

CAMPAIGN FIRES STAFFED BY THE TUCSON WEATHER OFFICE IMET-2000

Rattlesnake Fire	Tucson, AZ	6/09/00-6/10/00
Burgdorf Jct Fire	McCall,ID	7/25/00-8/02/00
Trail Creek Fire	Atlanta,ID	8/24/00-9/03/00

RED FLAG VERIFICATION

POD - Probability of detection...ratio of red flag events warned to the total number of red flag events. A ratio of 1 means total skill while a ratio of 0 means no skill.

FAR - False alarm ratio...ratio of red flag events not verifying when forecasted to total number of red flag warning. A ratio of 1 means no skill while a ratio of 0 means total skill.

CSI - Critical success index...ratio of verified red flag warnings to the sum of the false alarms and number of red flag events. A ratio of 1 means total skill while a ratio of 0 means no skill.

Phoenix Office

POD = .67 FAR = .38 CSI = .48

Flagstaff Office

POD = .96 FAR = .34 CSI = .64

NUMBER OF SPOT FORECASTS ISSUED BY PHOENIX OFFICE

<u>BURNS</u>	<u>FIRES</u>	<u>TOTAL</u>
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19

7

26

NUMBER OF SPOT FORECASTS ISSUED BY FLAGSTAFF OFFICE

BURNS
93

FIRES
103

TOTAL
196

FIRE WEATHER TEACHING ASSIGNMENTS BY PHOENIX OFFICE

3/08/00-3/10/00	S-290	San Carlos, AZ
3/27/00-3/29/00	S-490	Tucson, AZ
4/04/00-4/05/00	S-590	Marana, AZ

FIRE WEATHER TEACHING ASSIGNMENTS BY FLAGSTAFF OFFICE

03/02/00	NFDRS	USFS
4/03/00-04/05/00	S-290	USFS
9/23/00	S-290	USFS

Robert Berkovitz
Fire Weather Forecaster

